

## CLAIMS:

1. A method for treating a surface with titanium dioxide, **characterized** in that
  - the surface is treated with a composition that comprises nanocrystalline titanium dioxide, and
  - the composition is used as a powder or aqueous solution, wherein the dry content of the titanium dioxide is as high as or higher than a concentration, wherein the solution becomes thixotropic and wherein the power of the titanium dioxide to bind itself to the surface is exploited,
- 10 whereby, when spread onto the surface by means of water, the composition remains on the surface even after physical removal, forming a photocatalytic and/or dirt repellent layer on top of the treated surface.
2. A method according to Claim 1, **characterized** in that the titanium dioxide in the composition is in the form of particles, an essential part of which are capable of sedimenting in the water.
- 15 3. A method according to Claim 1 or 2, **characterized** in that over 50% of the titanium dioxide crystals in the composition is in the form of agglomerates.
4. A method according to any of the preceding claims, **characterized** in that the crystal size of the titanium dioxide in the composition is from 3 to 200 nm.
- 20 5. A method according to any of the preceding claims, **characterized** in that the specific surface of the titanium dioxide is from 20 to 300 m<sup>2</sup>/g.
6. A method according to any of the preceding claims, **characterized** in that the composition contains at least 42% by weight of nanocrystalline titanium dioxide.
7. A method according to any of the preceding claims, **characterized** in that the amount of nanocrystalline titanium dioxide and water in the composition totals in over 75% by weight.
- 25 8. A method according to any of the preceding claims, **characterized** in that the composition contains one or more of the following: barium sulphate, hydrophilic inorganic oxides, such as tin oxide, zinc oxide, iron oxide.
- 30 9. A method according to any of the preceding claims, **characterized** in that the surface being treated is a non-living surface that is exposed to oxygen and natural light or artificial light.

10. The use of nanocrystalline titanium dioxide as powder or thixotropic aqueous solution for treating surfaces by exploiting the power of the titanium dioxide to bind itself to the surface.